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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,884	03/23/2001	Harlan Theodore Jacobs	1327.011US1	7390

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EXAMINER	
JACKSON, BLANE J	
ART UNIT	**PAPER NUMBER**
2618	

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/815,884	JACOBS ET AL.	
	Examiner	Art Unit	
	Blane J. Jackson	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 20 March 2006 have been fully considered but they are not persuasive. The applicant indicates that the prior art Little or Meunier do not teach a reason to combine where primary prior art Tuttle teaches a circuit comprising a thin film battery glued to the substrate or base material and Meunier discloses a method to produce a thin film battery. However, both Tuttle and Meunier teach the application of a thin film battery in similar environments. Tuttle teaches radio frequency identification (RFID) package or tag for the tracking of material or vehicles in transport that best functions as an active tag, one configured with a battery, for greater range as opposed to a passive short-range tag. Meunier teaches a thin film battery constructed by successively depositing a first, second and third coat material on a flexible or rigid substrate covered with an electricity conductive coating, column 4, lines 56-62, for numerous applications such as integration in smart cards of the bank card type. This application requires a thin and flexible power source, column 1, lines 19-24. Consequently, Tuttle teaches the application and the attachment of a thin film battery to be used in the application of the claim language whereas Meunier teaches an alternative method to construct a thin film battery on the same support structure of a similar application. This opinion is the basis for the combination of Tuttle and Meunier in the Final Rejection to follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5-8, 9, 11, 16-20, 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (US 6,078,791) with a view to Meunier et al. (US 5,202,201).

As to claims 1 and 11, Tuttle teaches a method and apparatus for a combined battery and wireless communications system comprising:

A flexible support structure (figure 2, support layer (30) a RFID device bonded to a rigid or flexible thin film support, column 3, lines 39-43 and column 4, lines 5-13),

A thin film battery *mounted to the substrate* (figure 2, batteries (38) and (40), column 7, lines 31-44 and figure 4B, column 21-26),

An antenna mounted to the support structure (figure 2, dipole antenna, conductive strips (34) and (36), column 7, lines 31-38),

An electronic communications circuit mounted to the support structure and electrically coupled to the battery and the antenna to transceiver radio communications (figure 1A is the functional block diagram and figures 4A-4D, transceiver IC (32) bonded to the support structure, column 8, lines 12-20).

Tuttle teaches a thin-film batteries (column 4, lines 14-19) bonded with epoxy to the support structure (column 8, lines 21-26) but does not teach a first conductive layer

deposited on the support structure and a thin film battery deposited as successive thin film depositions over at least a portion of the first conductive layer.

Meunier teaches a thin film battery deposited on a flexible support structure with a first conductive layer deposited on a first surface area of the support structure (column 2, line 64 to column 3, line 17) and a thin film battery deposited as successive thin-film depositions over at least a portion of the first conductive layer, the battery comprising a cathode layer, a solid state electrolyte layer and an anode layer deposited such that either the anode layer or the cathode layer is in electrical contact with the first conductive layer and the electrolyte layer in contact with and completely separating the anode layer and the cathode layer (column 4, lines 56-62 and figure 5, column 8, lines 5-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to realize the thin film battery bonded to the supporting structure in the application of Tuttle as alternatively constructed on the supporting structure as taught by Meunier to make it possible to continuously produce composite elements having a large surface area and can be made to travel continuously in the cathodic sputtering depositions enclosure, roll to roll processing techniques.

As to claims 5 and 16 with respect to claim 1 and 11, Tuttle teaches the assembly includes a rigid or flexible thin film support member to support integrated circuits, antenna and thin film batteries disposed thereon (figure 2, column 4, lines 5-21) where the flexible support member would inherently bend to match a curved shape.

As to claims 6-8 and 17-19 with respect to claims 1 and 11, Tuttle teaches the antenna is within the integrated circuit, or position adjacent to the IC on the thin support member, column 4, lines 5-14, in the form of a dipole or loop antenna typically screen printed on the upper surface of the base support layer, column 7, line 31-38 and column 6, lines 35-50. Tuttle further teaches the outer surfaces of two batteries may also serve as a bow tie antenna, column 10, lines 25-36 where this alternative battery/ antenna structure teaches a plurality methods to selectively position and deposit or screen ink the conductive pattern of the antenna consistent with the packaging design and manufacturing method.

As to claims 9 and 20 with respect to claims 1 and 11, Tuttle teaches wherein the electronic circuit includes a recharging circuit that recharges the battery using energy received by the antenna (figure 9, the "battery" being a charge on capacitor (148) is maintained by conventional RF charging circuits on IC (150), energized from a remote source through the antenna, such as an electronic device configured as a radio frequency identification (RFID) transceiver, column 10, lines 37-48).

As to claims 22 and 26, Tuttle teaches an integrated combined battery and wireless communication device comprising:

A flexible support structure (figure 2, support layer (30) a RFID device bonded to a rigid or flexible thin film support, column 3, lines 39-43 and column 4, lines 5-13),

A thin film battery bonded to the substrate (figure 2, batteries (38) and (40), column 9, lines 11-14),

An energy receiving device mounted to the support structure,

An electronic communications circuit including an antenna mounted to the support structure and including a recharging circuit, the recharging circuit electrically coupled to the battery and the energy receiving device to recharge the battery using energy received by the energy receiving device (figure 9, communications circuit including an antenna (154 and 156) and a recharging circuit that recharges the battery using energy received by the antenna, the "battery" being a charge on capacitor (148) is maintained by conventional RF charging circuits on IC (150), energized from a remote source through the antenna, such as an electronic device configured as a radio frequency identification (RFID) transceiver, column 10, lines 37-48).

Tuttle teaches a thin-film batteries (column 4, lines 14-19), which are bonded to the support structure (column 8, lines 21-26) but does not teach a first conductive layer deposited on the support structure and a thin film battery deposited as successive thin film depositions over at least a portion of the first conductive layer.

Meunier teaches a thin film battery deposited on a flexible support structure comprising a first conductive layer deposited on a first surface area of the support structure (column 1, lines 8-24 and column 2, line 64 to column 3, line 17) and a thin film battery deposited as successive thin-film depositions over at least a portion of the first conductive layer, the battery comprising a cathode layer, a solid state electrolyte layer and an anode layer deposited such that either the anode layer or the cathode

layer is in electrical contact with the first conductive layer and the electrolyte layer in contact with and completely separating the anode layer and the cathode layer (column 4, lines 56-62, figure 5, column 8, lines 5-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to realize the thin film battery bonded to the supporting structure in the application of Tuttle as alternatively constructed on the supporting structure as taught by Meunier to make it possible to continuously produce composite elements having a large surface area and can be made to travel continuously in the cathodic sputtering depositions enclosure, roll to roll processing techniques.

Claims 2-4, 12-15, 23, 24, 31, 32 and 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (US 6,078,791) and Meunier et al. (US 5,202,201 and further in view of Bates (US 5,569,520).

As to claims 2-4, 12-15, 23, 24 and 34-39 with respect to claims 1, 11, 22 and 33, Meunier of Tuttle modified teaches a positive titanium oxysulphide electrode, a lithium ion-conductive glass electrolyte and a negative lithium electrode but is silent on a anode and cathode with an intercalation material or the electrolyte layer comprises LIPON.

Bates teaches one or a stack of rechargeable lithium battery comprising a substrate, then successive deposited layers of metal cathode current collector, a cathode layer comprising a lithium intercalation material or lithium cobalt oxide, an electrolyte layer comprising LIPON and an anode film comprised of lithium, column 5, lines 7-30, column 3, line 11 to column 4, line 10. Bates further teaches a multicell

battery suitable for applications requiring moderate amounts of power, column 7, lines 23-27.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the deposited layer materials of Tuttle modified with the lithium compounds as taught by Bates to form a rechargeable thin film battery capable of providing moderate amounts of power suitable for cellular telephones, laptop computers, hearing aids and cardiac pacemakers.

As to claims 31 and 32, Tuttle teaches a method and apparatus for a combined rechargeable battery and wireless communications system comprising:

A support structure (figure 2, support layer (30) a RFID device bonded to a rigid or flexible thin film support, column 3, lines 39-43 and column 4, lines 5-13),

A thin film battery bonded to the substrate (figure 2, batteries (38) and (40), column 9, lines 11-14),

A wireless energy receiving device mounted to the support structure (figure 2, dipole antenna, conductive strips (34) and (36), column 10, lines 37-48),

An electronic communications circuit mounted to the support structure and electrically coupled to the battery and the antenna to transceiver radio communications (figure 1A is the functional block diagram and figures 4A-4D, transceiver IC (32) bonded to the support structure, column 8, lines 12-20).

Tuttle teaches a thin-film batteries (column 4, lines 14-19), which are bonded to the support structure (column 8, lines 21-26) but does not teach a first conductive layer

deposited on the support structure and a thin film battery deposited as successive thin film depositions over at least a portion of the first conductive layer.

Meunier teaches a thin film battery deposited on a flexible support comprising a first conductive layer deposited on a first surface area of the support structure (column 1, lines 8-24 and column 2, line 64 to column 3, line 17) and a thin film battery deposited as successive thin-film depositions over at least a portion of the first conductive layer, the battery comprising a cathode layer, a solid state electrolyte layer and an anode layer deposited such that either the anode layer or the cathode layer is in electrical contact with the first conductive layer and the electrolyte layer in contact with and completely separating the anode layer and the cathode layer (column 4, lines 56-62, figure 5, column 8, lines 5-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to realize the thin film battery bonded to the supporting structure in the application of Tuttle as alternatively constructed on the supporting structure as taught by Meunier to make it possible to continuously produce composite elements having a large surface area and can be made to travel continuously in the cathodic sputtering depositions enclosure, roll to roll processing techniques.

Tuttle modified teaches a wireless communication device mounted to the support structure including a recharging circuit, the recharging circuit electrically coupled to the battery and the energy receiving device to recharge the battery using energy received by the energy receiving device but does not teach an electronic hearing aid or implantable medical device.

Bates teaches one or a stack of rechargeable lithium battery comprising a substrate, then successive deposited layers of metal cathode current collector, a cathode layer comprising a lithium intercalation material or lithium cobalt oxide, an electrolyte layer comprising LIPON and an anode film comprised of lithium, column 5, lines 7-30, column 3, line 11 to column 4, line 10. Bates further teaches a multicell battery suitable for applications including cellular telephones, laptap computers, hearing aids and cardiac pacemakers, column 7, lines 23-27.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the deposited layer materials of Tuttle modified with the lithium compounds as taught by Bates to form a rechargeable thin film battery capable of providing moderate amounts of power to drive a variety of portable electronic devices.

Claims 10, 21, 25, 33, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (US 6,078,791) and Meunier et al. (US 5,202,201 and further in view of Little (US 4,740,431).

As to claims 10, 21, 25, 40 and 41 with respect to claims 1, 11, 22, 31 and 33, Tuttle teaches a RFID device comprising a battery positioned on a rigid or flexible thin film support member, column 5, line 65 to column 6, line 14, but does not teaches a photovoltaic cell including a recharging circuit that recharges the battery.

Little teaches an integrated thin film photovoltaic or solar cell and battery with supporting circuits for the solar cell to charge the battery, figures 1-3, column 5, lines 18-39).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the RFID device of Tuttle modified to include the photovoltaic cell and charge circuits of Little to provide long term activation of the RFID device.

As to claim 33, Tuttle teaches a method and apparatus for a combined rechargeable battery and wireless communications system comprising:

A support structure (figure 2, support layer (30) a RFID device bonded to a rigid or flexible thin film support, column 3, lines 39-43 and column 4, lines 5-13),

A thin film battery bonded to the substrate (figure 2, batteries (38) and (40), column 9, lines 11-14),

A wireless energy receiving device mounted to the support structure (figure 2, dipole antenna, conductive strips (34) and (36), column 10, lines 37-48),

An electronic communications circuit mounted to the support structure and electrically coupled to the battery and the antenna to transceiver radio communications (figure 1A is the functional block diagram and figures 4A-4D, transceiver IC (32) bonded to the support structure, column 8, lines 12-20).

Tuttle teaches a thin-film batteries (column 4, lines 14-19), which are bonded to the support structure (column 8, lines 21-26) but does not teach a first conductive layer deposited on the support structure and a thin film battery deposited as successive thin film depositions over at least a portion of the first conductive layer.

Meunier teaches a thin film battery deposited on a flexible support structure comprising a first conductive layer deposited on a first surface area of the support

structure (column 1, lines 8-24 and column 2, line 64 to column 3, line 17) and a thin film battery deposited as successive thin-film depositions over at least a portion of the first conductive layer, the battery comprising a cathode layer, a solid state electrolyte layer and an anode layer deposited such that either the anode layer or the cathode layer is in electrical contact with the first conductive layer and the electrolyte layer in contact with and completely separating the anode layer and the cathode layer (column 4, lines 56-62, figure 5, column 8, lines 5-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to realize the thin film battery bonded to the supporting structure in the application of Tuttle as alternatively constructed on the supporting structure as taught by Meunier to make it possible to continuously produce composite elements having a large surface area and can be made to travel continuously in the cathodic sputtering depositions enclosure, roll to roll processing techniques.

Tuttle modified teaches a wireless communication device mounted to the support structure including a recharging circuit, the recharging circuit electrically coupled to the battery and the energy receiving device to recharge the battery using energy received by the energy receiving device but does not teach a timepiece.

Little teaches a thin film integrated solar cell and storage battery with recharging circuits where this circuit is sized to drive device with high power requirements including radio transceivers, portable computers, talking watches and calculators, figure 1, column 2, lines 36-53 and column 5, lines 18-39.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize in the thin film circuit of Tuttle modified the battery based circuit suitable to drive other electronic loads including calculators and wristwatches in an efficient manner.

Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (US 6,078,791) and Meunier et al. (US 5,202,201) and further in view of Lew et al. (US 6,608,464).

As to claims 27 and 29 with respect to claim 22, Tuttle modified teaches an energy receiving device, column 10, lines 37-48 but does not teach the energy receiving device comprises an electromechanical electric generator or magnetic transducer.

Lew teaches an integrated power source layered with thin film rechargeable batteries, charger and charge controller where selection of the source of current delivered to the battery is under the control of an auto select charging unit (figure 10, column 7, lines 7-50). The three current sources are a Solar Cells (88), RF/ Microwave Induction Charger and Miniature Generator (94), figure 3d, inductive charging: column 5, line 62 to column 6, line 4.

It would have been obvious to one of ordinary skill in the art at the time of the invention to expand the energy source of Tuttle modified to include the alternatives of Lew to ensure recharging of the batteries.

As to claims 28 and 30 with respect to claim 22, Tuttle modified does not teach the energy receiving device comprises an acoustic transducer.

Lew teaches the selection of three sources to source the circuits and charge the battery (figure 10) but does not teach the energy receiving device comprises an acoustic transducer. However, since Lew teaches the idea of a variety of sources, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply any other suitable power source to Tuttle modified to ensure the device has available power to operate.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J. Jackson whose telephone number is (571) 272-7890. The examiner can normally be reached on Monday through Friday, 9:00 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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